

## CLAIMS

1. A modified serogroup W135 meningococcal capsular saccharide, wherein: (a)  $\leq 29\%$  of the sialic acid residues in the saccharide are O-acetylated at the 7 position; and/or (b)  $\geq 26\%$  of the sialic acid residues in the saccharide are O-acetylated at the 9 position.
- 5 2. A modified serogroup Y meningococcal capsular saccharide, wherein (a)  $\leq 9\%$  of the sialic acid residues in the saccharide are O-acetylated at the 7 position; and/or (b)  $\geq 29\%$  or  $\leq 27\%$  of the sialic acid residues in the saccharide are O-acetylated at the 9 position.
3. The modified meningococcal capsular saccharide of claim 1 or claim 2, wherein  $>0\%$  of the sialic acid residues in the saccharide are O-acetylated at the 7 position.
- 10 4. The modified meningococcal capsular saccharide of claim 1 or claim 2, wherein  $>0\%$  of the sialic acid residues in the saccharide are O-acetylated at the 9 position.
5. A modified meningococcal capsular saccharide, optionally conjugated to a carrier protein, wherein the saccharide comprises  $n$  or more repeating units of the disaccharide unit:
 

[sialic acid] – [hexose]

- 15 where the hexose is either galactose or glucose and  $n$  is an integer from 1 to 100, and wherein:
 

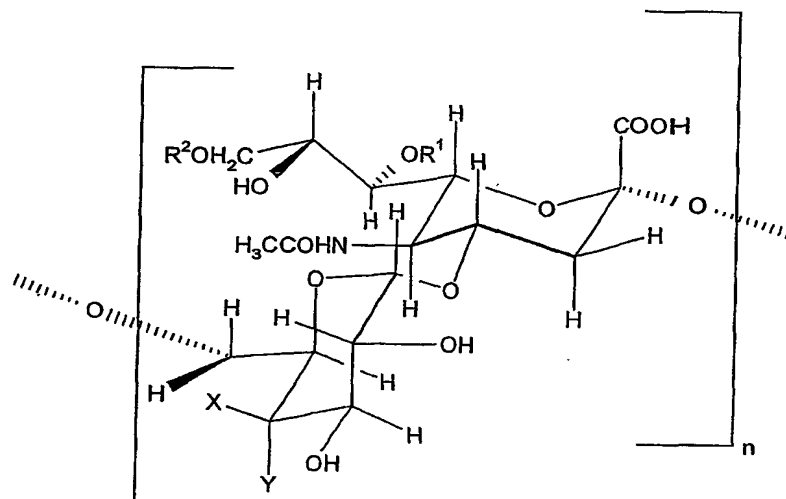
(a)  $\leq x\%$  of the sialic acid residues in said  $n$  or more repeating units are O-acetylated at the 7 position; and/or

(b) when hexose is galactose,  $\geq y\%$  of the sialic acid residues in said  $n$  or more repeating units are O-acetylated at the 9 position, and when hexose is glucose,  $\geq y\%$  or  $\leq z\%$  of the

- 20 sialic acid residues in said  $n$  or more repeating units are O-acetylated at the 9 position,

where: when hexose is galactose,  $x$  is 29 and  $y$  is 26; and when hexose is glucose,  $x$  is 9,  $y$  is 29 and  $z$  is 27.
- 6. The saccharide of claim 5, wherein hexose is galactose, about 6% of the sialic acid residues in said  $n$  or more repeating units are O-acetylated at the 7 position, and about 43% of the sialic acid
- 25 residues in said  $n$  or more repeating units are O-acetylated at the 9 position.
- 7. The saccharide of claim 5, wherein hexose is glucose, about 6% of the sialic acid residues in said  $n$  or more repeating units are O-acetylated at the 7 position, and about 45% of the sialic acid residues in said  $n$  or more repeating units are O-acetylated at the 9 position.
- 8. A composition comprising  $a$  molecules of serogroup W135 meningococcal capsular saccharide, wherein the average number of sialic acid residues per capsular saccharide molecule is  $b$ , and wherein: (a)  $\leq 29\%$  of the  $a \cdot b$  serogroup W135 sialic acid residues in the composition are O-acetylated at the 7 position; and/or (b)  $\geq 26\%$  of the  $a \cdot b$  serogroup W135 sialic acid residues in the composition are O-acetylated at the 9 position.
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9. A composition comprising  $a$  molecules of serogroup Y meningococcal capsular saccharide, wherein the average number of sialic acid residues per capsular saccharide molecule is  $b$ , and wherein: (a)  $\leq 9\%$  of the  $a \cdot b$  serogroup Y sialic acid residues in the composition are O-acetylated at the 7 position; and/or (b)  $\geq 29\%$  or  $\leq 27\%$  of the  $a \cdot b$  serogroup Y sialic acid residues in the composition are O-acetylated at the 9 position.
10. The composition of claim 8 or claim 9, wherein the capsular saccharide is conjugated to a protein carrier.
11. A saccharide comprising  $n$  or more repeats of the following disaccharide unit:



10 wherein:

- $n$  is an integer from 1 to 100,
- X and Y are different groups selected from -H and -OH,
- $R_1$  is independently selected from -H and -COCH<sub>3</sub> and may be the same or different in each disaccharide unit,
- $R_2$  is independently selected from -H and -COCH<sub>3</sub> and may be the same or different in each disaccharide unit, and,
  - when X is -OH and Y is -H, (a)  $\leq 29\%$  of  $R^1$  are -COCH<sub>3</sub> and/or (b)  $\geq 26\%$  of  $R^2$  are -COCH<sub>3</sub>,
  - when X is -H and Y is -OH, (a)  $\leq 9\%$  of  $R^1$  are -COCH<sub>3</sub> and/or (b)  $\geq 29\%$  or  $\leq 27\%$  of  $R^2$  are -COCH<sub>3</sub>.

12. The saccharide of any preceding claim, wherein the saccharide has an average degree of polymerisation of less than 30.

13. The conjugation product of (i) a saccharide of any preceding claim, and (ii) a carrier protein selected from the group consisting of: diphtheria toxoid, tetanus toxoid, *H. influenzae* protein D, and CRM<sub>197</sub>.

14. An immunogenic composition comprising (a) a modified capsular saccharide or conjugate of any preceding claim, and (b) a pharmaceutically acceptable carrier.
15. The composition of claim 14, in aqueous form.
16. The composition of claim 14, in lyophilised form.
- 5 17. The composition of any one of claims 14 to 16, further comprising a capsular saccharide antigen from serogroup C of *N.meningitidis*.
18. The composition of any one of claims 14 to 17, further comprising a capsular saccharide antigen from serogroup A of *N.meningitidis*.
19. The composition of claim 18, wherein the serogroup A antigen
- 10 20. The composition of any one of claims 14 to 19, further comprising an antigen from serogroup B of *N.meningitidis*.
21. The composition of any one of claims 14 to 20, further comprising a saccharide antigen from *Haemophilus influenzae type B*.
- 15 22. The composition of any one of claims 14 to 21, further comprising an antigen from *Streptococcus pneumoniae*.
23. The composition of any one of claims 14 to 22, further comprising one or more of : an antigen from hepatitis A virus; an antigen from hepatitis B virus; an antigen from *Bordetella pertussis*; a diphtheria toxoid; a tetanus toxoid; and/or a poliovirus antigen.
24. The composition of any one of claims 14 to 23, for use as a medicament.
- 20 25. A method for raising an antibody response in a mammal, comprising administering a composition of any one of claims 14 to 23 to the mammal.
26. The use of a modified serogroup W135 meningococcal capsular saccharide and/or a modified serogroup Y meningococcal capsular saccharide as defined in any one of claims 1 to 13, in the manufacture of a medicament for protecting against meningococcal meningitis.
- 25 27. A process for preparing an immunogenic conjugate comprising the steps of: (1) providing a starting serogroup W135 or serogroup Y meningococcal capsular saccharide and a carrier protein, either or both of which is/are optionally modified to render it/them reactive towards the other; (2) forming a covalent bond between the saccharide and the carrier protein; and  
30 O-acetylation at the 9 position of sialic acid residues in the starting saccharide increases.